



G-5's "Eye on AMC"

U.S. Army Materiel Command

Essential in Peace, Indispensable in War

January 16, 2003

ARL researchers work on oil-free turbochargers

Researchers at the U.S. Army Research Laboratory co-located, with NASA in Cleveland hope the oil-free turbocharger technology they're working on will improve the performance and reliability of heavy diesel powered military vehicles.

Currently, most diesel engines rely on a turbocharger that is lubricated by oil. Kevin Radil, a mechanical engineer, and his colleagues, who started working on this technology in the mid-1990s, hope to change that. The oil-free turbocharger technology is composed of high-speed rotating equipment that operates without oil-lubricated rotor supports such as bearings, dampers, and seals.

"This technology is significant because you eliminate oil cooking (burning oil), oil leakage, oil consumption, and contamination so the oil won't spill or leak onto other parts," Radil said.

The new technology consists of foil bearings and tribological coatings. Instead of oil, the foil bearings use air for lubrication. These bearings operate at high speeds and temperatures. The tribological coatings provide protection and increase the durability of the bearings. The coating is a NASA-developed, high-temperature, solid lubricant coating tailored for foil bearings that operate from a cold start to 1,500 degrees Fahrenheit without vaporization or emissions.

Volunteers in Kuwait

AMC personnel tell their story

Rudy Hamby

"One of the greatest things is working with the troops."

Rudy Hamby is on his second tour of duty deployed to Camp Arifjan, Kuwait in the TACOM Forward Repair Activity. At home at Anniston Army Depot, Anniston, Ala., Hamby is a fielding mechanic. He travels extensively inspecting, repairing, and modifying M1 tanks, M113s, M109s and towed artillery and training unit mechanics. Based on all that travel, being deployed to Kuwait is not as much of a change as it is for other people. However, Hamby insists that it is different -- this time the work is for real and Soldiers are waiting for equipment to complete their combat missions.

In Kuwait, Hamby is rebuilding 1,790 engines for return to the deployed theater stockpile. These engines are almost immediately issued to units in Iraq to fix vehicles that are required for their combat and support missions. While Hamby had not rebuilt engines recently, he did have experience from earlier in his career. In fact, he was probably more prepared than most to work at Arifjan. Based on his widespread experience, he could handle about any automotive job put in front of him.

Rock Island Argus
Jan. 12, 2004

"It's so much more satisfying, being out here in the field, than to be sitting behind a desk."

Toni VanArsdale
Army Materiel Command employee from Rock Island Arsenal
serving in Camp Arifjan, Kuwait